

## REMARKS

Applicant respectfully submits:

Claims 42, 47, 48, 50-52, 68 and 71 are pending.

Applicant wishes to thank Supervisory Examiner Kim and Examiner Menon for their time in considering telephone calls from Applicant's Attorney, Jacob N. Erlich and, in particular, the review of a draft of the amended claims provided herein and submitted to Supervisory Examiner Kim on February 2, 2010. Although no formal indication of allowability was provided by Supervisory Examiner Kim, on February 16, 2010, Supervisory Examiner Kim indicated these claims were reviewed by her and Examiner Menon and appears to be positive.

Applicant has submitted herewith a Supplemental Information Disclosure Statement, which includes a copy of a Notice of Allowance, Determination of Patent Term Adjustment, Notice of Allowability from divisional U.S. Patent Application Serial No. 12/209,421, filed on September 12, 2008, and copies of the European and Chinese patent grants, Office Actions from Australia and Japan (including cited reference) and an Application Data Sheet.

These draft amended claims are now presented as amended independent claims 42 and 50. None of the amendments in these claims alter the basic concept of the original claims, nor do they add new matter. The claims as they now appear, are respectfully considered to be in condition for allowance not only because of the remarks presented below, but also because the patentable language of amended independent claims 42 and 50 include, in method terminology, patentable limitations contained in the allowable claims found in Applicant's copending divisional US application SN 12/290,421 and, further, the Examiner has considered such limitations in the system claims of SN 12/290,421 allowable in view of the prior art of record in the present application pursuant Section 609.02 of the MPEP wherein the Examiner of a continuing application (including a divisional application) will consider information which has been considered by the USPTO in the parent application.

More specifically support for these amendments have been found in the original application as identified below:

**Claim 42:**

utilizing the semi-permeable barrier to restrict solute from flowing into the first chamber while allowing the solvent to flow cross into the second chamber ~~as the solvent flows from the first chamber into the second chamber~~ a void is created in the first chamber such that a vacuum develops in the first chamber and increases the pressure in the second chamber;

causing a progressively decreasing pressure in the first chamber; (found in specification, among other places, page 13, lines 24-27 and in drawings)

increasing the pressure in the second chamber as the solvent crosses into the second chamber from the first chamber; (found in specification, among other places, page 13, lines 12 and 13 and in drawings and from the deleted section two paragraphs above)

applying the increased pressure against a flexible diaphragm in order to deflect the diaphragm; (found in specification, among other places, page 16, lines 19-32, page 17 lines 1-3 and in drawings)

utilizing the flexible diaphragm to separate the second chamber from fluid adjacent a member; (found in specification, among other places, page 16, lines 19-32, page 17 lines 1-3 and in drawings)

driving the member by the fluid pushing the member as a result of the deflection of the diaphragm to produce movement from which work can be extracted; (found in specification, among other places, page 16, lines 19-32, page 17 lines 1-7 and in drawings)

**Claim 50:**

utilizing the semi-permeable barrier to restrict solute from flowing into the first chamber while allowing the solvent to flow cross into the second chamber ~~as the solvent flows from the first chamber into the second chamber~~ a void is created in the first chamber such that a vacuum develops in the first chamber and increases the pressure in the second chamber;

causing a progressively decreasing pressure in the first chamber; (found in specification, among other places, page 13, lines 24-27 and in drawings)

increasing the pressure in the second chamber as the solvent crosses into the second chamber from the first chamber; (found in specification, among other places, page 13, lines 12 and 13 and in drawings and from the deleted section two paragraphs above);

periodically applying and removing the increased pressure to drive a member which produces a substantial linear displacement of the object;

applying the increased pressure against a flexible diaphragm in order to deflect the diaphragm; (found in specification, among other places, page 16, lines 19-32, page 17 lines 1-3 and in drawings)

utilizing the flexible diaphragm to separate the second chamber from fluid adjacent a member; (found in specification, among other places, page 16, lines 19-32, page 17 lines 1-3 and in drawings)

driving the member by the fluid pushing the member as a result of the deflection of the diaphragm in order to produce a substantial linear displacement of the object by the member; (found in specification, among other places, page 16, lines 19-32, page 17 lines 1-7 and in drawings)

The following arguments are provided by Applicant to overcome the Examiner's rejection of the previous claims under 35 USC 112:

**1. Prior claims 42, 47, 48, 50-52, 68 and 71 were rejected under 35 USC § 112 First Paragraph**

In view of the amendments presented to independent claims 42 and 50, it no longer appears that these claims should be rejected under 35 US § 112 since they avoid the concerns raised by the Examiner. In addition, the language now contained in independent claims 42 and 50 include, in method terminology, language contained in the allowable claims found in Applicant's copending divisional US application SN 12/290,421. Thus, the 35 USC 112 rejection presented by the Examiner appears to be moot with respect the claims as now provided herein.

Further, Applicant's specification, as pointed out above in the support for the amended claims, clearly contains a teaching of the manner and process of making and using the invention

in terms which correspond in scope to those used in describing and claiming the subject matter sought to be patented. Thus, the Examiner is respectfully requested to consider the disclosure as being in compliance with the enablement requirement of 35 U.S.C. 112, first paragraph, unless there is a reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support.

"As stated by the court, it is incumbent upon the Patent Office, whenever a rejection on this basis is made, to explain *why* it doubts the truth or accuracy of any statement in a supporting disclosure and to back up assertions of its own with acceptable evidence or reasoning which is inconsistent with the contested statement." (see MPEP 2164.04, internal quotations omitted). The examiner should always look for enabled, allowable subject matter and communicate to Applicant what that subject matter is at the earliest point possible in the prosecution of the application. It appears that such is now the case with the allowance of Applicant's divisional application.

More specifically, 35 U.S.C. 112 requires the specification to be enabling only to a person "skilled in the art to which it pertains, or with which it is most nearly connected." In general, the pertinent art should be defined in terms of the problem to be solved rather than in terms of the technology area, industry, trade, etc. for which the invention is used.

The specification need not disclose what is well-known to those skilled in the art and preferably omits that which is well-known to those skilled and already available to the public. *In re Buchner*, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991); *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1384, 231 USPQ 81, 94 (Fed. Cir. 1986), *cert. denied*, 480 U.S. 947 (1987); and *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1463, 221 USPQ 481, 489 (Fed. Cir. 1984). (MPEP 2164.05(a)). The evidence provided by Applicant to rebut the non-enablement rejection need not be conclusive but merely convincing to one skilled in the art.

In summary, as pointed out in MPEP 2164.08, all questions of enablement are evaluated against the claimed subject matter. The focus of the examination inquiry is whether everything within the scope of the claim is enabled. The Federal Circuit has repeatedly held that "the

specification must teach those skilled in the art how to make and use the full scope of the claimed invention without 'undue experimentation'." *In re Wright*, 999 F.2d 1557, 1561, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993). Nevertheless, not everything necessary to practice the invention need be disclosed. In fact, what is well-known is best omitted. *In re Buchner*, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991). All that is necessary is that one skilled in the art be able to practice the claimed invention, given the level of knowledge and skill in the art. Further the scope of enablement must only bear a "reasonable correlation" to the scope of the claims. See, e.g., *In re Fisher*, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970).

The present claimed invention is clearly described in the specification as seen by the above support of the claimed language and the specification includes sufficient description when viewed by one of ordinary skill in the art that one can make and use the present invention.

Therefore, based upon the amendment to the claims and the above comments, the specification clearly enables the claimed invention and meets all the criteria of 35 USC 112, first paragraph and this rejection should be removed with respect to the amended claims.

With respect to the prior art rejections raised by the Examiner with respect to the previously submitted claims, Applicant has presented the rebuttals below as if they were applied to the currently amended claims. In addition, as pointed out above, the patentable language of amended independent claims 42 and 50 include, in method terminology, patentable limitations contained in the allowable claims found in Applicant's copending divisional US application SN 12/290,421. These claims are now in line with the draft claims submitted Feb. 2, 2010 for review by Examiners Kim and Menon .

**2. Prior claims 42, 47, 48, 50-52, 68, and 71 were rejected under 35 U.S.C. §102(b) as being anticipated by, or, in the alternative, under 35 U.S.C. §103(a), as being obvious over Loeb (US 3,906,250 or "Loeb").**

More specifically, Loeb fails to show or describe the following method steps as set forth in items 1-3 of producing energy (independent claim 42) and of producing linear displacement of an object (independent claim 50):

- 1) providing a sealed first chamber;

- 2) providing a sealed second chamber;
- 3) periodically applying and removing the increased pressure.

**Loeb also fails to show or describe the amended subject matter:**

- 4) causing a progressively decreasing pressure in the first chamber;
- 5) applying the increased pressure against a flexible diaphragm in order to deflect the diaphragm;
- 6) utilizing the flexible diaphragm to separate the second chamber from fluid adjacent a member;
- 7) driving the member by the fluid pushing the member as a result of the deflection of the diaphragm in order to produce movement to extract work as in independent claim 42 or produce a substantial linear displacement of the object by the member as in independent claim 50;

Applicant first addresses the patentability of this invention by pointing out the above amended method limitations 4-7 to the claims are no where shown or described in the Loeb patent.

Second, in further support of patentability, Applicant, for purposes of brevity, incorporates herein, in its entirety, Applicant's arguments presented in the Appeal Brief filed August 14, 2009 and present the following arguments in summarized form:

Applicant contends that Loeb's patent describes the use of continuous flow in a pressure retarded osmosis (PRO) system is in stark contrast to Applicant's claimed invention of "causing a progressively decreasing pressure in the first chamber" For example, Loeb discloses "A volume  $(V+\Delta V)$   $m^3$  of mixed solution is sent to the hydroturbine 126 at a pressure of  $P_{atm}$ . Thus the hydroturbine delivers  $P(V+\Delta V)$   $m^3$  of work (via the connection 129) in the course of reducing the pressure of the mixed solution to zero. The new output of work is equal to the difference between the output from the hydroturbine and the input to the pump, i.e., the net work is  $(P\Delta V)$   $m^3$  atm." It is important to understand that net work is obtained in Loeb only from  $\Delta V$ , the volume of permeate liquid passing through the membranes." See Loeb, col. 12, lines 41-54.

It is clear that a clear distinction between Applicants's claimed invention and Loeb resides in Applicants providing a pair of sealed containers which cause the (osmotic) pressure to increase as the solvent passes through the membrane. Applicant's claimed invention produces useable energy output when pressure is periodically applied and removed from the pressure chamber as claimed. (Underlining added.) These steps are clearly lacking in Loeb.

With respect to the Examiner's comments related to "Periodically applying can mean anything..." this is an incorrect statement since no where in Loeb does Loeb speak of a periodic application or removal of pressure. In fact, on the contrary, Loeb uses a continuous flow of solvent and solute and relies on an increase in volume rather than, as Applicant claims, "periodically applying and removing the increased pressure to drive a member which produces a movement from which work can be extracted." (Independent Claim 42) or "... substantial linear displacement of the object." (Independent claim 50)

In order to further clarify why Loeb does not periodically apply and remove pressure, Applicant refers to the figures of Loeb. In particular, the pressure retarded osmosis system of Loeb is described in greatest detail with respect to Figs. 1, 2a, 2b, 3, 3a, 4, 4a, 5, and 6. In particular, each of these figures indicates that an external hydraulic pressure P is applied to the surface of the sea water 6 via a pump 16, 26, 66, or 36. This pressure is used to slow the flux of the permeate, fresh water, into the sea water (see Loeb, Esq. 1 and 2). This is necessary in Loeb to allow the increased volume,  $\Delta V$  to be used to provide the additional energy to drive the turbine 17, 27, 67, and 37, 47, and 57. Clearly, the pressure retarded osmosis system of Loeb, which uses continuous flow is different than Applicant's claimed inventions and methodology. (Underlining added).

It is important to note that the term "periodically" is not used in the Loeb patent at all. On the contrary, the Loeb system is described as a continuous system in the brief description of the drawings for Figs. 3 and 4 (see Loeb, col. 3, lines 19-26). The Loeb patent also uses the term continuous in the description accompanying Figs. 2a and 2b (see Loeb col. 4, lines 45-53). In addition, the Loeb patent describes the process as continuous in the description of Figs. 3 and 3a

(see Loeb, col. 4, lines 56-60). In addition, it is clear when discussing the operation of the pressure retarded osmosis system or apparatus, that both the brine and the river water both have inlets and outlets (see Figs. 3, 3a, 4, 4a, 5, 5a, and 6).

In addition, the further patentable limitations incorporated in these claims similar to the limitations found in the allowable divisional application SN 12/290,421 clearly renders this application allowable as well.

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); *MPEP* 2131. In addition, a patent to an apparatus does not necessarily prevent a subsequent inventor from obtaining a patent on a new method of using the apparatus. A new and improved use for a process is indeed patentable subject matter, 35 USC 101. (*Perricone v Medics Pharmaceutical Corporation*, 432 F. 3d 1368 (Fed. Cir. 2005)).

Because the above claimed method steps are lacking in Loeb, Applicant respectfully contends that an anticipation rejection under 35 U.S.C. §102 rejection of the claims is inappropriate. Applicant respectfully states that for the reasons stated above, independent claims 42 and 50 are patentably defined over Loeb. Claims 47-48, and claim 68 depend from claim 42 and are patentable for at least the same reasons. Claims 51-52 and 71 depend from claim 50 and are patentable for at least the same reasons. Thus, none of the claims are anticipated by Loeb for the reasons stated above and all claims are therefore patentable over the Loeb reference.

With respect to the 35 U.S.C. §103(a) rejection, “To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.” (*MPEP* 2143)



It is pointed that the Examiner has not addressed how he intends to make up for the deficiencies in his support of a 35 U.S.C. §103 rejection of the claims. The Examiner has only applied Loeb under 35 U.S.C. §103 in his rejection of the claims, and clearly Loeb as pointed out above has many deficiencies when used as prior art against the present method claims. In any case, Applicant provides below even further reasons why a 35 U.S.C. §103 of the claims is inappropriate.

Based upon and as clearly shown in the above arguments, the use of the Loeb reference under 35 U.S.C. §103 would also be inappropriate. Even if the Examiner found a reference(s), which he did not, which taught the deficiencies of Loeb, such a combination would be inappropriate under 35 U.S.C. §103 since "If when combined, the references "would produce a seemingly inoperative device," then they teach away from their combination. In re Sponnoble, 56 C.C.P.A. 823, 405 F.2d 578, 587, 160 U.S.P.Q. (BNA) 237, 244 (CCPA 1969); see also In re Gordon, 733 F.2d 900, 902, 221 U.S.P.Q. (BNA) 1125, 1127 (Fed. Cir. 1984) (finding no suggestion to modify a prior art device where the modification would render the device inoperable for its intended purpose)" (as cited in Tec-Air Inc. v. Denso Manufacturing, 192 F.3d 1353, 1360 (Fed. Cir. 1999).) In KSR International Co. v. Teleflex Inc., 127 S. Ct. 1727, 1740 (2007), the Court identified "teaching away" as a strong indicator of nonobviousness. The teachings of Loeb teach away from Applicant's claimed limitations as noted above and a prima facie case of obviousness of the Applicant's invention has not been established.

Even if the Examiner applied Official Notice to meet the deficiencies of Loeb, which he did not, based on MPEP 2144.03:

Official notice without documentary evidence to support an examiner's conclusion is permissible only in some circumstances. While "official notice" may be relied on, these circumstances should be rare when an application is under final rejection or action under 37 CFR 1.113. Official notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known. As noted by the court in In re Ahlert, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970), the notice of facts beyond the record which may be taken by the examiner must be "capable of such instant and unquestionable demonstration as to defy dispute" (citing In re Knapp Monarch Co., 296 F.2d 230, 132 USPQ 6 (CCPA 1961))....

Applicant respectfully states that for the reasons stated above, and further because of the amendments to the claims provided in this response, independent claims 42 and 50 are patentably defined over Loeb both under 35 U.S.C. §§102 and 103. Claims 47-48, and claim 68 depend from claim 42 and are patentable for at least the same reasons. Claims 51-52 and 71 depend from claim 50 and are patentable for at least the same reasons.

**3. Prior claims 42, 47-48, 50-52, 68, and 71 were rejected under 35 U.S.C. §102(b), as being anticipated by, or, in the alternative, under 35 U.S.C. §103(a), as being obvious over DE 3121968 ("the German patent").**

More specifically, the German patent fails to show or describe the following method steps as set forth in items 1-3 of producing energy (independent claim 42) and of producing linear displacement of an object (independent claim 50):

- 1) providing a sealed first chamber;
- 2) providing a sealed second chamber;
- 3) periodically applying and removing the increased pressure.

**The German patent also fails to show or describe the amended subject matter:**

- 4) causing a progressively decreasing pressure in the first chamber;
- 5) applying the increased pressure against a flexible diaphragm in order to deflect the diaphragm;
- 6) utilizing the flexible diaphragm to separate the second chamber from fluid adjacent a member;
- 7) driving the member by the fluid pushing the member as a result of the deflection of the diaphragm in order to produce movement to extract work as in independent claim 42 or produce a substantial linear displacement of the object by the member as in independent claim 50;

Applicant first addresses the patentability of this invention by pointing out the above amended method limitations 4-7 to the claims are no where shown or described in the German patent.

Second, in further support of patentability, Applicant for purposes of brevity, has already herein incorporated in its entirety Applicant's arguments presented in the Appeal Brief filed August 14, 2009 and presents the following arguments in summarized form:

It is respectfully pointed out Loeb and the German patent is quite similar and both rely upon a pressure retarded osmosis system (PRO).

Applicant respectfully contends that the comments below (especially in view of the similar comments with respect to Loeb) provide sufficient reasons to support that claims 42 (independent), 47, 48, 50 (independent), 51, 52, 68 and 71 are patentable over the German patent and the Examiner's 35 U.S.C. §§102 and 103 rejections are in error.

More specifically, as set forth below, the German patent fails to show or describe the following, but not limited to, method steps of producing energy (independent claim 42) and of producing linear displacement of an object (independent claim 50). The German patent fails to show steps lacking in Loeb as well as "transferring...solute solution to a third chamber" as set forth below:

By not describing, disclosing or showing the above steps, the German patent clearly cannot be utilized to support a 35 U.S.C. §102 rejection; and without any teaching (no secondary reference utilized by the Examiner) or indication of how official notice can be taken to meet these limitations without destroying the intended operation of the German patent, the German patent cannot be utilized by the Examiner in a 35 U.S.C. §103 rejection of the claims.

In support of Applicant's position, Applicant presents the following:

The Examiner asserts that:

DE teaches a method of pressurizing a solute solution and converting the pressure to energy (by a turbine or by a reciprocating machine, which is a piston machine: see claim 22, page 8 and [claim] 28, page 9 of the English translation of the reference; piston in the reciprocating machine has linear displacement) using a solvent by passing the solvent across into the solution through a semi permeable membrane – see Figs. The solution is exhausted after the pressure is converted to energy as claimed. Solvent chamber pressure

reduces due to loss of solvent by osmosis, which would inherently create a loss of pressure, or vacuum, as discussed above. In the Figs., for example, figure 1, solvent chamber is (5), solution chamber is (6), and the membrane is (4).

DE teaches solvent recycle; and the process of evaporation can be optimally selected from the various available methods - see page 16-20 of the English translation (especially, page 18) - including air circulation, heat pump, and solar energy. Using vacuum for evaporation, particularly at ambient temperature, is known in the art. Even though the reference does not explicitly teach a third chamber, it is implied in terms of evaporation ponds or evaporators and condensers required in the various recycling schemes contemplated by the reference, which include both solvent and concentrated solute solution. (Underlining added)

"Periodically applying and removing the increased pressure" to drive a member to produce work can mean anything from occasional start and stop of a system to a reciprocation system. The reference teaches both turbine and reciprocation engines for energy conversion. Actual details to how to set up the system would be within the skill [skill] level of one of ordinary skill in the art. The claimed invention does not provide details that would make the claim patentable over the prior arts.

It is apparent that the German patent functions in a substantially similar way to the inappropriate Loeb reference. In particular, the German patent, like Loeb, also uses two continuously flowing fluids that are adjacent to one another and separated by a semi-permeable membrane. As the two fluids are adjacent to the semi-permeable membrane, the solvent will flow across the membrane into the solute, wherein the solute is used to provide energy. Accordingly, the German patent reference also suffers from the same deficiencies outlined above with respect to the Loeb reference and the arguments with respect to the Loeb reference are incorporated herein by reference against the German patent.

As pointed out above, the claimed invention calls for periodically applying and removing the increased pressure to drive a member as in claim 42 and which produces a substantial linear displacement of an object as in claim 50. This process is neither disclosed, shown, taught nor suggested in the German patent.

In order to further clarify why the German patent does not periodically apply and remove pressure, Applicant refers to Figs. 1-5 of the German patent. In particular, although not specifically labeled as a pressure retarded osmosis (PRO) system, the fact is that the German patent is such a system and applies an external hydraulic pressure to the sea water as does Loeb. Thus, the German patent and Loeb operate in very similar manners. It is Applicant's contention that such reciprocation in the German patent without a further explanation of periodically applying and removing the increased pressure as claimed does not meet the periodic application and removal of increased pressure as claimed by Applicant. No where in the German patent is such a step of periodically applying and removing of pressure described.

With respect to the Examiner's comments related to "Periodically can mean anything..." this is an incorrect statement since no where in the German patent does it speak of a periodic application of pressure. In fact, on the contrary the German patent uses a continuous flow of solvent and solute and relies on an increase in volume such as in Loeb rather than, as Applicant describes in the specification and claims, "periodically applying and removing the increased pressure."

In the description in the specification of the German patent, the solute and solvent solutions are taught to flow past one another through the reaction chamber 3. There is no mention of sealing the solvent side of the reaction chamber 3 or of periodically removing a portion of the increased pressure in the reaction vessel as in the claimed invention. None of the figures or descriptions teaches the use of a sealed solvent chamber that is initially closed and is periodically opened as in the claimed invention.

In addition, the Applicant disputes the Examiner's assertion that "[e]ven though the reference does not explicitly teach a third chamber" (as in the claimed invention) "it is implied in terms of evaporation ponds or evaporators and condensers required in the various recycling schemes contemplated by the reference." The use of evaporation ponds does not imply a third chamber as in the claimed invention method step and the Examiner has provided no further explanation to support this assertion.

In addition, the further patentable limitations incorporated in these claims similar to the limitations found in the allowable divisional application SN 12/290,421 clearly renders this application allowable as well.

Accordingly, claims 42 and 50 include method steps that are not disclosed, shown, nor taught by the German patent and therefore are not anticipated by the German patent under 35 U.S.C. §102(b). “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); MPEP 2131. In addition, a patent to an apparatus does not necessarily prevent a subsequent inventor from obtaining a patent on a new method of using the apparatus. A new and improved use for a process is indeed patentable subject matter, 35 USC 101. (*Perricone v Medics Pharmaceutical Corporation*, 432 F. 3d 1368 (Fed. Cir. 2005)).

Claims 47, 48, and claim 68 depend from claim 42 and are patentable for at least the same reasons. Claims 51-52 and 71 depend from claim 50 and are patentable for at least the same reasons. Thus, none of the claims are anticipated by the German patent for the reasons stated above and all claims are therefore patentable over the German patent.

With respect to the 35 U.S.C. §103(a) rejection, “To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.” (MPEP 2143)

It is pointed out that the Examiner has not addressed how he intends to make up for the deficiencies brought up by Applicant in his rebuttal of the 35 U.S.C. §102 rejection in support of a 35 U.S.C. §103 rejection of the claims. The Examiner has only applied the German patent under 35 U.S.C. §103 in his rejection of the claims, and clearly the German patent as pointed out

above has many deficiencies including those as pointed out with Loeb, and in addition, lacks a third chamber (by the Examiner's own admission) when used as prior art against the present method claims.

It would not be obvious to modify the German patent to form the claimed invention because the German patent would become inoperable for its intended purpose. The German patent fails to discuss the use of a third chamber at all for any purpose much less recycling. To provide a recycling system to the highly diluted solute solution is contrary to the German patent. Modifying the German patent to include a third chamber for recycling purposes is inappropriate and such a change is clearly unobvious under 35 U.S.C. §103.

Even if the Examiner applied Official Notice to meet the deficiencies of DE reference, which he did not, based on MPEP 2144.03:

Official notice without documentary evidence to support an Examiner's conclusion is permissible only in some circumstances. While "official notice" may be relied on, these circumstances should be rare when an application is under final rejection or action under 37 C.F.R. §1.113. Official notice unsupported by documentary evidence should only be taken by the Examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known. As noted by the court in *In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970), the notice of facts beyond the record which may be taken by the examiner must be "capable of such instant and unquestionable demonstration as to defy dispute" (citing *In re Knapp Monarch Co.*, 296 F.2d 230, 132 USPQ 6 (CCPA 1961))....

Even if the Examiner found a reference which taught these deficiencies of the German patent, such a combination would be inappropriate under 35 U.S.C. §103 since "If when combined, the references "would produce a seemingly inoperative device," then they teach away from their combination. In *re Spinnoble*, 56 C.C.P.A. 823, 405 F.2d 578, 587, 160 U.S.P.Q. (BNA) 237, 244 (CCPA 1969); see also *In re Gordon*, 733 F.2d 900, 902, 221 U.S.P.Q. (BNA) 1125, 1127 (Fed. Cir. 1984) (finding no suggestion to modify a prior art device where the modification would render the device inoperable for its intended purpose)" (as cited in *Tec-Air Inc. v. Denso Manufacturing*, 192 F.3d 1353, 1360 (Fed. Cir. 1999).) In *KSR International Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1740 (2007), the Court identified "teaching away" as a strong

indicator of nonobviousness. The teachings of the German patent teach away from Applicant's claimed limitations as noted above and a prima facie case of obviousness of the Applicant's invention has not been established.

Applicant respectfully states that for the reasons stated above, independent claims 42 and 50 are patentably defined over the German patent. Claims 47-48, and claim 68 depend from claim 42 and are patentable for at least the same reasons. Claims 51-52 and 71 depend from claim 50 and are patentable for at least the same reasons. Thus, none of the claims are obvious over the German patent for the reasons stated above and all claims are therefore patentable over the German patent.

**4. Prior claims 42, 47, 48, 50-52, 68, and 71 were rejected under 35 U.S.C. §102(b) as being anticipated by, or, in the alternative, under 35 U.S.C. §103(a), as being obvious over Prueitt (US 6,185,940 or "Prueitt").**

More specifically, Prueitt fails to show or describe the following method steps as set forth in items 1-3 of producing energy (independent claim 42) and of producing linear displacement of an object (independent claim 50):

- 1) providing a sealed first chamber;
- 2) providing a sealed second chamber;
- 3) periodically applying and removing the increased pressure.

**Prueitt also fails to show or describe the amended subject matter:**

- 4) causing a progressively decreasing pressure in the first chamber;
- 5) applying the increased pressure against a flexible diaphragm in order to deflect the diaphragm;
- 6) utilizing the flexible diaphragm to separate the second chamber from fluid adjacent a member;
- 7) driving the member by the fluid pushing the member as a result of the deflection of the diaphragm in order to produce movement to extract work as in independent claim 42 or produce a substantial linear displacement of the object by the member as in independent claim 50;



Applicant first addresses the patentability of this invention by pointing out the above amended method limitations 4-7 to the claims are not shown or described in the Prueitt patent. For example, Prueitt does not periodically apply the increased pressure against a flexible diaphragm in order to deflect the diaphragm, utilize the flexible diaphragm to separate the second chamber from fluid adjacent a member; and drive the member by the fluid pushing the member as a result of the deflection of the diaphragm in order to produce movement to extract work as in independent claim 42 or produce a substantial linear displacement of the object by the member as in independent claim 50.

Second, in further support of patentability, Applicant presents the following arguments:

Contrary to providing a sealed first chamber as claimed, the volume or chamber 63 (or 3) of Prueitt, operates similar to the Loeb and German patents, it appears from a reading of Prueitt, Prueitt provides a continuous flow as shown by the arrows indicated in Figure 3 going into and out of volume 63, or volume 3 as shown by the arrows of numerals 1 and 2. There is no indication in Prueitt that the valves are used to specifically seal the first chamber or volume or the second chamber or volume. Further lacking, are the steps of periodically applying and removing the increased pressure.

As pointed out in columns 6, lines 5 and 6, "In the multi-stage system shown in Fig. 3, the brine concentration for the first stage is the second stage." As follows in column 6, lines 15-16, "The second stage then operates like the system described in Fig. 1." With respect to Fig. 1 as pointed out in column 2, line 66 and 67- column 3, line 1, "Fresh water or a relatively low concentration of brine solution, such as sea water and the like, is introduced into the inlet 1 of an osmotic chamber having an outlet 2...." In essence, as shown by the arrows in Fig. 3 coming into an out of the chamber or volume 63, the flow of fresh water or low concentration brine solution continuously flows through the chamber or volume 63 (or 3). Using valves to operate the chambers or volumes of Prueitt in the manner claimed by Applicant of sealing the first chamber and periodically applying and removing the increased pressure is only described in Applicant's invention. The description provided in Applicant's specification and claims would be the only teaching that allows operation as specifically claimed by Applicant. With respect to the utilization of Prueitt to meet the claimed method, the Examiner must specifically point out

where in the Prueitt reference that Prueitt recognizes such a claimed method takes place. Mentioning that such methodology may be possible utilizing the valve structure shown in Prueitt is not acceptable and supports Applicant's position that such a method is based upon the description found in Applicant's specification and claims.

Applicant does not argue that motors 21 and 21' are not operated by the system of Prueitt, Applicant's arguments are directed specifically to the claimed method of Applicant's invention in which sealing chambers and periodically applying and removing pressure to push a member to extract work as indicated in independent claim 40 and to produce a substantial linear displacement of an object as indicated in indicated claim 50 are patentable. In addition, the further patentable limitations incorporated in these claims similar to the limitations found in the allowable divisional application SN 12/290,421 clearly renders this application allowable as well.

Accordingly, claims 42 and 50 include method steps that are not disclosed, shown, nor taught by Prueitt and therefore are not anticipated by Prueitt under 35 U.S.C. §102(b). "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); MPEP 2131. In addition, a patent to an apparatus does not necessarily prevent a subsequent inventor from obtaining a patent on a new method of using the apparatus. A new and improved use for a process is indeed patentable subject matter, 35 USC 101. (*Perricone v Medics Pharmaceutical Corporation*, 432 F. 3d 1368 (Fed. Cir. 2005)).

Claims 47, 48, and claim 68 depend from claim 42 and are patentable for at least the same reasons. Claims 51-52 and 71 depend from claim 50 and are patentable for at least the same reasons. Thus, none of the claims are anticipated by Prueitt for the reasons stated above and all claims are therefore patentable over Prueitt.

With respect to the 35 U.S.C. §103(a) rejection, "To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary

skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.” (MPEP 2143)

It is pointed out that the Examiner has not addressed how he intends to make up for the deficiencies brought up by Applicant in his rebuttal of the 35 U.S.C. §102 rejection in support of a 35 U.S.C. §103 rejection of the claims. The Examiner has only applied Prueitt under 35 U.S.C. §103 in his rejection of the claims, and clearly Prueitt as pointed out above has many deficiencies including those as pointed out with Loeb and the German patent.

It would not be obvious to modify Prueitt to form the claimed invention because Prueitt would become inoperable for its intended purpose. Even if the Examiner applied Official Notice to meet the deficiencies of Prueitt, which he did not, based on MPEP 2144.03:

Official notice without documentary evidence to support an Examiner's conclusion is permissible only in some circumstances. While "official notice" may be relied on, these circumstances should be rare when an application is under final rejection or action under 37 C.F.R. §1.113. Official notice unsupported by documentary evidence should only be taken by the Examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known. As noted by the court in *In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970), the notice of facts beyond the record which may be taken by the examiner must be "capable of such instant and unquestionable demonstration as to defy dispute" (citing *In re Knapp Monarch Co.*, 296 F.2d 230, 132 USPQ 6 (CCPA 1961))....

Even if the Examiner found a reference which taught these deficiencies of Prueitt, such a combination would be inappropriate under 35 U.S.C. §103 since “If when combined, the references “would produce a seemingly inoperative device,” then they teach away from their combination. In *re Sponnoble*, 56 C.C.P.A. 823, 405 F.2d 578, 587, 160 U.S.P.Q. (BNA) 237, 244 (CCPA 1969); see also *In re Gordon*, 733 F.2d 900, 902, 221 U.S.P.Q. (BNA) 1125, 1127 (Fed. Cir. 1984) (finding no suggestion to modify a prior art device where the modification would render the device inoperable for its intended purpose)” (as cited in *Tec-Air Inc. v. Denso Manufacturing*, 192 F.3d 1353, 1360 (Fed. Cir. 1999).) In *KSR International Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1740 (2007), the Court identified “teaching away” as a strong indicator of

nonobviousness. The teachings of Prueitt teach away from Applicant's claimed limitations as noted above and a prima facie case of obviousness of the Applicant's invention has not been established.

Applicant respectfully states that for the reasons stated above, independent claims 42 and 50 are patentably defined over Prueitt. Claims 47-48, and claim 68 depend from claim 42 and are patentable for at least the same reasons. Claims 51-52 and 71 depend from claim 50 and are patentable for at least the same reasons. Thus, none of the claims are obvious over Prueitt for the reasons stated above and all claims are therefore patentable over Prueitt.

### **CONCLUSION**

In view of the remarks presented above and further in view of the fact that amended independent claims 42 and 50 now include, in method terminology patentable language contained in the allowable claims found in Applicant's copending divisional US patent application SN 12/209,421, and the remaining claims 47, 48, 51, 52, 68, and 70 all appropriately depend there from this application appears in condition for allowance and a notice of allowance is respectfully solicited.

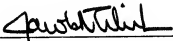
No fees are believed to be necessary beyond the fees provided herein. Should further fees be required, however, the Director of Patents and Trademarks is hereby authorized to charge such fees and any deficiencies, to or credit any overpayment, to Deposit Account No. 03-2410, Attorney Docket No.: 41056-110.

The following information is presented in the event that a call may be deemed desirable by the Examiner:

JACOB N. ERLICH, ESQ. (617) 345-3255.

Respectfully submitted,  
Irving W. DeVoe, Applicant

Dated: March 10, 2010

By:   
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